

MMA Science and Mathematics Department  
2014 Department Self-Study  
Response to External Reviewer  
Spring 2014

Self-Study Committee:

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The report from the external reviewer was received by the department and was sent to the faculty of the department. The faculty was given two weeks to send comments to the Committee. Based on those comments and the recommendations from the external reviewer, the Self-Study Committee of the Science and Mathematics Department has come to the following conclusions.

1. The committee agrees with the following items brought up by the external reviewer.
  - Assessment must improve within our department. The Area Coordinators are currently working with Kate McLaren to establish an assessment plan that will assess both course and departmental learning outcomes. The assessment plan should provide the faculty with the flexibility of building the course-specific assessment. It is also agreed that the faculty require training and guidance on assessment.
  - Carla Troupe's responsibilities in the EPSEM department should be reassigned to someone else so that Carla can focus on her increased workload in the Science and Mathematics Department.
  - The introduction of the Program Area Coordinators was an excellent idea. The Committee understands, however, that because this is still a new position, the Area Coordinators are still determining the exact roles that they will take. It is agreed that the Area Chairs should house and maintain the assessment plan of the department.
  - The department should continue to purchase equipment when funds are available to replace outdated equipment. Purchases should also be considered when equipment will enhance the learning experience of the Cadets.
  - Courses with multiple sections taught by different faculty members should have a common syllabus and should be taught at the same level. The department faculty already does maintain common syllabi with common learning outcomes. There is frequent contact between faculty members teaching similar courses to ensure they are consistent with one another.
  - The content in Algebra and Trigonometry has been diluted in recent years, though not specifically this year for the elimination of Intermediate Algebra. The changes were made in consultation with our client departments, with a goal of prioritizing those topics they most needed, leading to the elimination of some topics and change in emphasis on the remaining topics. Based on the high pass

rate in Fall 2013, the comments from the students and preliminary observations in following courses, the changes to Algebra and Trigonometry should be re-evaluated.

2. The committee disagrees with the following items brought up by the external reviewer.
  - The credits offered for courses in the Science and Mathematics Department should be consistent with the credits for similar courses at similar institutions such as SUNY Maritime, Bristol CC, and Cape Cod CC. The credit-load for all MMA students is very heavy and introducing more credits to other programs is a significant challenge to both the faculty of the Science and Mathematics Department and the faculty of major departments. Increasing the credits for these courses would need to be accompanied by more contact with the students as well and the Academy does not have the manpower or resources to achieve this.
  - Combining all sciences into one department in the future. While the division of these courses in other departments is primarily historical, there is no evidence to support moving the courses into the Science and Mathematics Department would be beneficial in the near future. The committee also understands that moving these courses would likely present a significant problem with the Collective Bargaining Agreement in terms of loading of professors within their own departments.
  - While the committee agrees that information for students interested in pursuing graduate degrees should be available, the Committee disagrees that this should fall into the realm of our department. If this is a prolific problem, the departments where this is occurring should take this on.
  - The Committee disagrees that the department does not make all attempts possible to offer the appropriate courses available for all students that require them. The department chair always works very closely with the Registrar to ensure this. Recently the department has offered many trailer sections of courses to compensate for students that have been advised poorly by other departments. These sections also give students a chance to catch up if they are behind in their program, or to get ahead in their program.
  
3. The committee recommends that the department make the following changes and recommendations.
  - While only a few Adjunct Professors are currently being used this semester, the continued need for Adjuncts suggests that the Department Chair should investigate the need for further faculty members in each of the areas of the department (mathematics, chemistry, and physics).
  - Develop an assessment plan to begin implementing in the fall of 2014. The plan should be devised by the Area Coordinators in consultation with the Department Chair and the Director of Institutional Advancement. Along with this, the Committee suggests that the Area Coordinators, in collaboration with the department faculty, analyze the Learning Outcomes of their specific area courses to ensure that they are consistent with the learning outcomes and mission of the department.

- Provide Carla Troupe with the appropriate support by assigning her duties in the EPSEM department to someone else.
  - The Admissions Office should clearly communicate that students need to complete Intermediate Algebra or ALEKS prior to enrollment.
  - The Department should ensure that all information about course offering times (such as which semesters a particular course is offered) should be easily accessible for all students and academic advisors.
  - The Committee recommends that the Department Chair and the Area Coordinators reflect on the effectiveness of the Area Coordinator position in two years. This should give the Chair and Area Coordinators a chance to determine how effective the Area Coordinator position is in reducing the workload of the Chair. At that time, the Chair and Area Coordinators should consult with the Dean regarding a split between the Science and Mathematics Department.
  - The administration should investigate the number of students that move on to graduate program upon graduation from the Academy. If there is a significant need, the Administration should direct departments through Governance to create a “graduate school” track for students in programs with this interest.
4. The committee suggests the department pursue the following as possible Governance Issues in the Fall of 2014.
- The Materials Science course should be added to the Course Catalog.
  - A “C-“ grade in Algebra & Trigonometry be the prerequisite for enrollment in Calculus I.
  - A “C-“ grade in Calculus I be the prerequisite for enrollment in Calculus II.
  - Students that place into Intermediate Algebra should be required to fulfill the “Global Completion Assessment” in ALEKS, rather than just the completion of 119 areas.
  - The tutoring requirement for students in Algebra and Trigonometry should be closely investigated to determine their effectiveness. Several faculty members have provided anecdotal evidence that this was not an effective learning environment for the students.